

DIY

Worthwhile projects you can build on your own



2-meter copper tape antenna

If you've ever been stuck in a hospital room for a few days, or in a hotel or stateroom while traveling, yet still need your fix for your ham radio addiction, you might have found yourself *accidentally* stowing your HT (handheld transceiver) among your things. You know that a good antenna is what will make that little guy shine, and while it would be nice to drag your [Pockrus J-pole](#) around wherever you go, that might not be very practical at times.

Unless you're headed to prison, chances are you'll have a window at your temporary lodgings. And a window is all you'll need, to mount this **2-meter copper tape antenna**. Understand that you might face two disadvantages of the tape antenna, one of which is that it won't likely deliver the performance of the Pockrus J-pole. The second is that your antenna is at the mercy of whatever direction your window is facing, so if it's facing away from your repeaters, your signal might not reach where you want. But *the tape antenna on your window is still better than a whip antenna inside your room.*

Don't let the simplicity of the tape antenna construction fool you; it's a true performer, yet doesn't require a lot of parts, time, or effort to make one. Let's dig in.

Parts list

7 feet of [10 mm adhesive copper tape](#)

One [PL-259 / SO-239](#) on [LMR-240UF](#) jumper

A hot (60 W) soldering iron, some solder, heat shrink tubing, and masking tape will be helpful

Construction

Cut the coax jumper in half, decide which end you want to use. I recommend the PL-259 end for most HT pigtails, but I'm going to use the SO-239 in this article, so that I can connect a separate piece of coax to extend its length later. Strip about two inches of the cut end of the coax jumper. Tin both exposed conductors, twist and trim the shield, then apply heat shrink tubing over all but $\frac{1}{4}$ " of the tinned shield.

If you find it difficult for solder to flow onto the twisted braid, because of its alloy type, try smearing a small amount of [solder flux](#) on it, then use a hot, tinned soldering iron to flow the solder onto the braid.



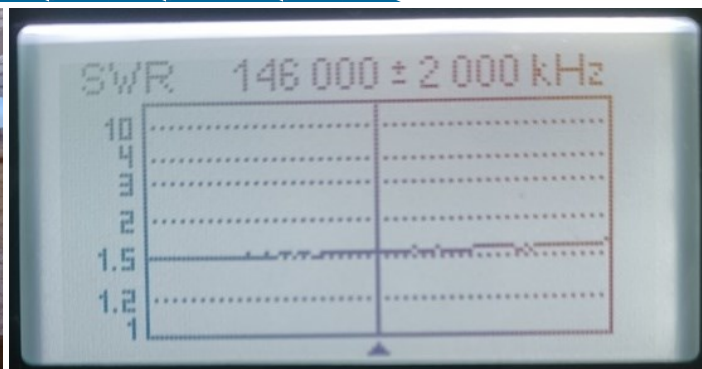
Cut two strips of the copper tape, about $19\frac{1}{2}$ " each, then peel back about an inch off one end of each. Don't remove the entire backing until you're ready to mount it on your window. For each copper tape, stick the exposed adhesive to a piece of *clean* glass, metal, or ceramic that won't get burned too badly by your soldering iron. Tin about $\frac{1}{4}$ " of the tape end. Finally, solder the tinned ends of the coax to the tinned ends of the copper tapes.





DIY, continued

2-meter copper tape antenna



Not perfect, but not bad either

Test time

Without removing the adhesive backing from the copper tape, use some masking tape to hold the antenna to a window, so that it's oriented vertically (pointed up-and-down), and as far away from metal as you can get it. Align the two elements exactly straight up and straight down, leaving about 1/8" of gap between them. Use more masking tape to hold the coax in place, to relieve the strain on the copper tape, and to keep the coax pointed horizontally away from the copper tape. Remove the adhesive backing, and secure the copper tape (you don't actually *have to remove it*.) Use an ohmmeter to ensure there are no shorts and that there is

continuity where it should be continuous. Connect the coax to your analyzer on 2 meters, and test away.

Connect an appropriate pigtail adapter between the antenna coax and your radio, and ask people how you sound. I made contacts through several of the local repeaters, plus folks on our local simplex net. The height of this antenna was definitely a disadvantage compared with my rooftop antenna, coupled with the fact that it's inside my house, which is surrounded by metal siding.

The result

This window tape antenna is nothing more than a vertically oriented 2-meter half-wave dipole, and performs well. One thing to keep in mind, if you do plan to use it in a hospital, is that many health care facilities have windows that are tinted with a slightly metallic film, making it a bit more difficult for a signal to penetrate than a purely glass window. Still, it's better than nothing, which many hams unfortunately face.

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